State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

February 23, 2007

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST FOR AMENDMENT OF THE HAWAII INVASIVE SPECIES CONTRACT 53779 TO THE UNIVERSITY OF HAWAII SO THAT A 3-MONTH TIME EXTENSION MAY BE PURSUED

This Board Submittal approves the amendment to the Hawaii Invasive Species Council (HISC) contract 53779 with the University of Hawaii, involving the foraging and movement patterns of Aratinga Eryghrogenys. The Board authorizes the Chairperson to enter into contract for these services, is subject to the certification of availability of funds and approval as to form by the Attorney General's Office.

BACKGROUND: The Department of Land and Natural Resources published a Request for Proposal (RFP) on May 13, 2005 on the State Procurement Office website for the FY06 HISC Program. The primary purpose of the HISC is to provide the institutional framework for leadership and coordination for a statewide invasive species prevention and control program.

HISC received an administrative budget of $4 million for the initial year to provide support for the operations of the HISC and its cooperating partners, to develop a comprehensive state-wide invasive species prevention, control, research, application of new technology, and outreach program. Of that amount, 17 grants were selected for funding through the Research and Technology program requiring $600,165 in HISC funding. These funds are matched with $983,572 in non-state dollars.

The following HISC contract requires an amendment for a 3-month time extension:

Contract 53779 – UH	Contract Recipient	Contract Amount
Determination of the foraging and movement patterns of the Aratinga Erythrogenys (AVES: PSITTACIDAE) using mist-net live capture and radio telemetry on Oahu Island, Hawaii	University of Hawaii PI: Kirsten M. Silvius, PhD	10,489.32

CONTRACT PROVISIONS:

This amendment will be negotiated with the identified organization to implement the project in accordance with their awarded proposal. Upon approval by the Board, the Division will submit the amendment for review and approval as to form by the Attorney General, and process the document for signature by the Chairperson.

RECOMMENDATION:

That the Board authorizes the Chairperson to negotiate and execute the amendment to the contract 53779 as outlined above subject to:

1. Approval as to form by the Attorney General's Office.

Respectfully submitted

PAUL J. CONRY, Administrator
Division of Forestry and Wildlife

Attachment

APPROVED FOR SUBMITTAL:

PETER T. YOUNG, Chairperson
Board of Land and Natural Resources

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

May 13, 2005

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST FOR APPROVAL TO ENTER INTO CONTRACTS OR PURCHASING AGREEMENTS TO IMPLEMENT SEVENTEEN HAWAII INVASIVE SPECIES COUNCIL RESEARCH AND TECHNOLOGY GRANT PROGRAM PROJECTS: WITH THE UNIVERSITY OF HAWAII FOR "METHODS TO CONTROL ALIEN ALGAE"; WITH THE USDA INST. OF PAC. ISLANDS FORESTRY OR UNIVERSITY OF HAWAII FOR "THE ACCELERATION OF MICONIA BIOCONTROL"; WITH THE UNIVERSITY OF HAWAII FOR "BIOCONTROL OF SNOWFLAKE CORAL"; WITH THE USDA PAC. BASIN AG. RESEARCH CTR FOR "NETTLE CATERPILLAR PHEROMONE STUDY"; WITH THE UNIVERSITY OF HAWAII FOR "COASTAL IMPACTS OF INVASIVE ANTS"; WITH THE UNIVERSITY OF HAWAII FOR A STUDY ON THE "ECOLOGY OF SNOWFLAKE CORAL"; WITH THE UNIVERSITY OF HAWAII FOR A PILOT STUDY "DETECTION & REPORTING OF INVASIVES"; WITH THE USDA INST. OF PAC. ISLANDS FORESTRY OR UNIVERSITY OF HAWAII FOR THE "TESTING OF MICONIA BIOCONTROL"; WITH THE BISHOP MUSEUM FOR A "REPTILE & AMPHIBIAN RISK ANALYSIS"; WITH THE USDA INST. OF PAC. ISLANDS FORESTRY OR UNIVERSITY OF HAWAII FOR THE "TESTING OF TIBOUCHINA BIOCONTROL"; WITH UTAH STATE UNIVERSITY FOR A STUDY ON "ECOLOGICAL CONSEQUENCES OF COQUI"; WITH THE UNIVERSITY OF HAWAII FOR A STUDY ON "CONTROL OF VEILED CHAMELEON"; WITH LEILANI NURSERY ON "THERMAL TREATMENT FOR COQUI"; WITH THE HAWAII AGRICULTURE RESEARCH CENTER FOR "TWIG BORER ATTRACTANTS & REPELLENTS"; WITH THE UNIVERSITY

Approved by the Board of Land and Natural Resources at its meeting held on 5/13/05

OF HAWAII FOR A "STUDY OF THE RED-MASKED CONURE"; WITH THE HAWAII DEPARTMENT OF HEALTH FOR A STUDY TO "MAP A NEW INVASIVE MOSQUITO"; WITH THE UNIVERSITY OF HAWAII FOR A STUDY ON "FOUNTAIN GRASS MANAGEMENT"

This Board Submittal approves contractual or purchasing agreement relationships for seventeen projects that address research and technology needs for invasive species priorities, and authorizes the Chairperson to develop and enter into contracts for these services, subject to the availability of funds and approval as to form by the Attorney General's Office.

BACKGROUND:

The 2003 State Legislature authorized the creation of the Hawaii Invasive Species Council and stated "the silent invasion of Hawaii by alien invasive species is the single greatest threat to Hawaii's economy, natural environment, and the health and lifestyle of Hawaii's people and visitors." Hawaii is one of the seven states in the nation that has recognized the need for coordination among all state agencies, at a cabinet level, that have responsibility to control invasive species on the ground, as well as regulate the pathways in which invasive species can gain access into the State.

The creation of the Council (whose members are the Directors of the Departments of Land and Natural Resources (DLNR,) Agriculture (DOA,) Business, Economic Development, and Tourism (DBEDT,) Health (DOH,) Transportation (DOT) and University of Hawaii (UH,) and other Department Directors (Hawaiian Home Lands (DHHL,) Commerce and Consumer Affairs (DCCA) and Defense (DOD)) now provides the institutional framework for leadership and coordination for a statewide invasive species prevention and control program.

HISC, through the DLNR, received an administrative budget of $4 million for the initial year to provide support for the operations of the HISC and its cooperating partners, to develop a comprehensive state-wide invasive species prevention, control, research, application of new technology, and outreach program. These funds will be matched 1:1 with non-state dollars. Of that amount, $700,000 was budgeted for the Research and Technology Grant program. A total of 71 grant applications were received and 17 were selected for funding.

These selected seventeen Research and Technology projects (Attachments A-Q), require $600,165 in HISC funding, and are matched with $983,572 in non-state dollars. They are:

Attachment	Project	Recipient	Amount
A	Control of Alien Algae	University of Hawaii	$82,980
B	Accelerate Biocontrol of *Miconia*	USDA Inst. of Pac. Islands Forestry or UH	$78,747
C	Biocontrol of Snowflake Coral	University of Hawaii	$52,018
D	Nettle Caterpillar Pheromone Study	USDA Pac. Basin Ag. Research Ctr	$50,000
E	Coastal Impacts of Invasive Ants	University of Hawaii	$47,359
F	Ecology of Snowflake Coral	University of Hawaii	$40,534
G	Detection & Reporting of Invasives	University of Hawaii	$37,400
H	Testing of *Miconia* Biocontrol	USDA Inst. of Pac. Islands Forestry or UH	$37,275
I	Reptile & Amphibian Risk Analysis	Bishop Museum	$36,250
J	Testing of *Tibouchina* Biocontrol	USDA Inst. of Pac. Islands Forestry or UH	$28,075
K	Ecological Consequences of *Coqui*	Utah State University	$26,800
L	Control of Veiled Chameleon	University of Hawaii	$25,000
M	Thermal Treatment for *Coqui*	Leilani Nursery	$22,675
N	Twig Borer Attractants & Repellents	Hawaii Agriculture Research Center	$21,500
O	Study of the Red-Masked Conure	University of Hawaii	$10,489
P	Mapping a New Invasive Mosquito	Hawaii Department of Health	$2,243
Q	Fountain Grass Management	University of Hawaii	$820

Some of the project amounts listed above are lower than were requested in their original proposals (Attachments F, K, P, and Q). The project with Hawaii Department of Health (Attachment P) will be awarded as a Cooperative Agreement. Two other projects with amounts less than $25,000 (Attachments M and Q) will be processed with Purchase Orders instead of contracts.

CONTRACT PROVISIONS

The Invitation for Bids for these projects was published on the State Procurement Office web site on November 3, 2004 (IFB No. HISC RT 001), November 23, 2004 (IFB No. HISC RT 002), and March 1, 2005 (IFB No. HISC RT 003).

Contracts or purchasing agreements will be negotiated with the principal investigators authorized by the recipients, to implement the projects according to their project descriptions. The standard State contract form or a contract agreement form developed specifically for the HISC awards, will be used and approved by the Attorney General's Office.

Upon approval by the Board, the Division will work with the grantee and the Attorney General's Office, to develop contract language and submit it for review and approval as to form by the Attorney General, and signature by the Chairperson.

RECOMMENDATION:

That the Board: 1) approve implementation of the HISC Research and Technology grant program for FY05; and 2) authorize the chairperson to negotiate and execute contracts subject to:

a. Scope of Services (Contract Deliverables) as described in the attached proposals,
b. Availability of state funds; and
c. Approval as to form by the Attorney General's Office.

Respectfully submitted,

PAUL J. CONRY
Administrator

Attachments (A-Q)

APPROVED FOR SUBMITTAL:

PETER T. YOUNG, Chairperson
Board of Land and Natural Resources

Proposal to Hawaii Invasive Species Council
Research and Technology Grant Fund

Development of Methods to Control Alien Algae on Hawaii's Reefs

Research funds requested: $82,980
Project Period: January 1-December 31, 2005

P.I. Cynthia L. Hunter,
University of Hawaii, Marine Biology
Dean 2, 2450 Campus Road,
Honolulu, HI 96822
808-956-4748 tel
808-956-4745 fax
cindyh@hawaii.edu

AUTHORIZING UNIVERSITY OFFICIAL: _____ DATE: 12/02/04
Kevin Hanaoka
Interim Director of Research Services

ADDRESS: University of Hawaii
Office of Research Services
Sakamaki D200
2530 Dole Street
Honolulu, HI 96822

Please ensure that all correspondence regarding this application and project are addressed to the Office of Research Services.

Problem Statement:

Hawaii's marine ecosystems support fishing and recreational activities, a tourism-based economy, and a cultural heritage. Currently, alien invasive algae present one of the most insidious threats to the health of Hawaii's coral reef ecosystems. Two mat-forming alien species, introduced in the 1970's for aquaculture research, are often unpalatable to native fish grazers, are highly invasive, and are capable of outcompeting and overgrowing corals. Without the development of an effective removal and control program, it is expected that these algae will continue to spread throughout the State, directly threatening the survival of Hawaii's coral reefs.

This proposed research will develop and test methods designed to restore key areas of coral reef and ecosystems in Hawaii. We will focus initial efforts in Kaneohe Bay where highly invasive alien seaweeds--*Gracilaria salicornia* and *Kappaphycus/Eucheuma* spp.—have spread dramatically during the past decade (Rogers and Cox, 1999; Smith et al. 2002)

Currently (October, 2004), the project stands poised to get underway within the next few weeks. Most of the necessary equipment (venturi pump, hoses, floating platform, and sorting table) has been identified, developed, and purchased. Preliminary tests of the system have been conducted at Hawaii Institute of Marine Biology. However, additional funding is needed for further testing and implementation of a full-scale, 12-month demonstration effort in Kaneohe Bay.

Approach and Methods

The goal of this project is to assess methodologies to restore Hawaii's coral reef ecosystems through removal and control of alien invasive algae. Specific objectives include:

a) Developing and deploying a mechanical suction system capable of removing large volumes of algal biomass from reefs while minimizing damage to other reef organisms, and quantifying the impact of this technique on the native benthic community,
b) Experimentally examining the effectiveness of enhancing populations of native sea urchins as a means of increasing grazing pressure on invasive algae and reducing their ability to regrow following large-scale mechanical removal, and,
c) Monitoring reefs subjected to the above treatments to determine their immediate and long-term effectiveness in controlling invasive algae.

Site Selection: Initial sites selected for algal removal will be in areas of Kaneohe Bay where blooms of the alien algae *Gracilaria salicornia* and *Kappaphycus sp.* have been documented. Sites will be selected at the margin of expanding algal blooms to help to prevent further spread of algae over new areas of coral reef. Adjacent to each removal site, an appropriate control site will be established where the same survey protocols are followed but without removal of alien algae. Mechanical algal removal will take place at a minimum of 3 sites in plots of various sizes ranging from $100m^2$ to $10,000\ m^2$. Additional sites will be added if person hours for mechanical removal prove sufficient.

Pre-Removal Surveys: In order to determine both the effectiveness of the mechanical removal technique and its impact on the reef environment, baseline surveys will be conducted prior to the